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 Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys
                              40
 Xaa Xaa Xaa Lys Xaa Xaa Arg Xaa Xaa Cys Xaa Xaa Cys Arg Xaa Xaa
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Lys Cys Xaa Xaa Xaa Gly Met
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VgEcR

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| <pre>&lt;400&gt; 4 atg gcc ccc ccg acc gat gtc agc ctg ggg gac gag ctc cac tta gac  4 Met Ala Pro Pro Thr Asp Val Ser Leu Gly Asp Glu Leu His Leu Asp</pre> | 8   |
| ggc gag gac gtg gcg atg gcg cat gcc gac gcg cta gac gat ttc gat 9 Gly Glu Asp Val Ala Met Ala His Ala Asp Ala Leu Asp Asp Phe Asp 20 25 30                  | 96  |
| ctg gac atg ttg ggg gac ggg gat tcc ccg ggt ccg gga ttt acc ccc 1 Leu Asp Met Leu Gly Asp Gly Asp Ser Pro Gly Pro Gly Phe Thr Pro 35 40 45                  | 44  |
| cac gac tcc gcc ccc tac ggc gct ctg gat atg gcc gac ttc gag ttt 1 His Asp Ser Ala Pro Tyr Gly Ala Leu Asp Met Ala Asp Phe Glu Phe 50 55 60                  | .92 |
| gag cag atg ttt acc gat gcc ctt gga att gac gag tac ggt ggg aag 2 Glu Gln Met Phe Thr Asp Ala Leu Gly Ile Asp Glu Tyr Gly Gly Lys 65 70 75 80               | 240 |
| ctt cta ggt acc tct aga agg ata tcg aat tct ata tct tca ggt cgc 2 Leu Leu Gly Thr Ser Arg Arg Ile Ser Asn Ser Ile Ser Ser Gly Arg 85 90 95                  | 288 |
| gat gat ctc tcg cct tcg agc agc ttg aac gga tac tcg gcg aac gaa 3 Asp Asp Leu Ser Pro Ser Ser Ser Leu Asn Gly Tyr Ser Ala Asn Glu 100 105 110               | 336 |
| agc tgc gat gcg aag aag agc aag aag gga cct gcg cca cgg gtg caa 3 Ser Cys Asp Ala Lys Lys Ser Lys Lys Gly Pro Ala Pro Arg Val Gln 115 120 125               | 884 |
| gag gag ctg tgc ctg gtt tgc ggc gac agg gcc tcc ggc tac cac tac 4 Glu Glu Leu Cys Leu Val Cys Gly Asp Arg Ala Ser Gly Tyr His Tyr 130 135 140               | 132 |
| aac gcc ctc acc tgt gga tcc tgc aag gtg ttc ttt cga cgc agc gtt 4 Asn Ala Leu Thr Cys Gly Ser Cys Lys Val Phe Phe Arg Arg Ser Val 145 150 155 160           | 180 |
| acg aag agc gcc gtc tac tgc tgc aag ttc ggg cgc gcc tgc gaa atg 5 Thr Lys Ser Ala Val Tyr Cys Cys Lys Phe Gly Arg Ala Cys Glu Met 165 170 175               | 528 |
| gac atg tac atg agg cga aag tgt cag gag tgc cgc ctg aaa aag tgc 5 Asp Met Tyr Met Arg Arg Lys Cys Gln Glu Cys Arg Leu Lys Lys Cys 180 185 190               | 576 |
| ctg gcc gtg ggt atg cgg ccg gaa tgc gtc gtc ccg gag aac caa tgt 6 Leu Ala Val Gly Met Arg Pro Glu Cys Val Val Pro Glu Asn Gln Cys 195 200 205               | 524 |

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|            |            |                   |                   |            |            |            |            |                   | 5          |            |            |            |                   |            |            |     |
|------------|------------|-------------------|-------------------|------------|------------|------------|------------|-------------------|------------|------------|------------|------------|-------------------|------------|------------|-----|
|            |            | aag<br>Lys        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 672 |
|            |            | tcg<br>Ser        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 720 |
|            |            | ggc<br>Gly        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 768 |
| tgc<br>Cys | gag<br>Glu | ccg<br>Pro        | ccc<br>Pro<br>260 | cag<br>Gln | cat<br>His | gcc<br>Ala | act<br>Thr | att<br>Ile<br>265 | ccg<br>Pro | cta<br>Leu | cta<br>Leu | cct<br>Pro | gat<br>Asp<br>270 | gaa<br>Glu | ata<br>Ile | 816 |
|            |            | aag<br>Lys<br>275 |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 864 |
|            |            | gtt<br>Val        |                   |            |            |            |            |                   |            |            |            | Gly        |                   |            |            | 91: |
|            |            | gaa<br>Glu        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 96  |
|            |            | caa<br>Gln        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 10  |
|            |            | gtc<br>Val        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 10  |
|            |            | ata<br>Ile<br>355 |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 11  |
|            |            | gtg<br>Val        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 11  |
|            |            | ata<br>Ile        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 12  |
|            |            | gcc<br>Ala        |                   | _          | _          | _          |            |                   | _          | _          | . –        | _          |                   |            | _          | 12  |
|            |            | atg<br>Met        |                   |            |            |            |            |                   |            |            |            |            |                   |            |            | 12  |

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|            |                   |            |            |            |            |                   |            |            | 6          |            |                   |            |            |            |            |      |
|------------|-------------------|------------|------------|------------|------------|-------------------|------------|------------|------------|------------|-------------------|------------|------------|------------|------------|------|
| act<br>Thr | gcc<br>Ala        |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1344 |
|            | gtc<br>Val<br>450 |            |            |            |            |                   |            |            |            | Asp        |                   |            |            |            |            | 1392 |
|            | ctc<br>Leu        |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1440 |
|            | ctg<br>Leu        |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1488 |
| _          | gag<br>Glu        | _          | _          |            |            |                   | _          |            |            |            | _                 |            | _          |            | _          | 1536 |
|            | ctc<br>Leu        |            |            |            |            | _                 | _          |            | _          |            | _                 |            | _          | _          | _          | 1584 |
| tcg<br>Ser | cac<br>His<br>530 | ctt<br>Leu | cag<br>Gln | att<br>Ile | acc<br>Thr | cag<br>Gln<br>535 | gag<br>Glu | gag<br>Glu | aac<br>Asn | gag<br>Glu | cgt<br>Arg<br>540 | ctc<br>Leu | gag<br>Glu | cgg<br>Arg | gct<br>Ala | 1632 |
|            | cgt<br>Arg        |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1680 |
|            | gac<br>Asp        |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1728 |
|            | cag<br>Gln        |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1776 |
|            | cag<br>Gln        |            | _          |            | _          | _                 | _          |            |            |            | _                 |            |            |            | _          | 1824 |
|            | caa<br>Gln<br>610 |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1872 |
|            | cag<br>Gln        |            | _          |            |            |                   | _          |            | _          |            |                   |            | _          |            | _          | 1920 |
|            | gtg<br>Val        |            |            |            |            |                   |            |            |            |            |                   |            |            |            |            | 1968 |

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|  |   |   |                                  |                         |                              |                            |                            |                                       |                                       | 7                              |                            |                                |                                |                         |                                      |                                |
|--|---|---|----------------------------------|-------------------------|------------------------------|----------------------------|----------------------------|---------------------------------------|---------------------------------------|--------------------------------|----------------------------|--------------------------------|--------------------------------|-------------------------|--------------------------------------|--------------------------------|
|  |   |   |                                  |                         |                              |                            |                            | gga<br>Gly                            |                                       |                                |                            |                                |                                |                         |                                      |                                |
|  |   |   |                                  |                         |                              |                            |                            | acg<br>Thr<br>680                     |                                       |                                |                            |                                |                                |                         |                                      |                                |
|  | . 5   |   |                                  |                         |                              |                            |                            | aac<br>Asn                            |                                       |                                |                            |                                |                                |                         |                                      |                                |
|  | • (   |   |                                  |                         |                              |                            |                            | gcg<br>Ala                            |                                       |                                |                            |                                |                                |                         |                                      |                                |
|  |   |   |                                  |                         |                              |                            |                            | cac<br>His                            |                                       |                                |                            |                                |                                |                         |                                      |                                |
|  |   |   |                                  |                         |                              |                            |                            | acg<br>Thr                            |                                       |                                | tag                        |                                |                                |                         |                                      |                                |
| <21<br><21   | 1:<br>2:  | > 5<br>> 74<br>> PF<br>> Ar                       | TS                               | icial                   | l Sed                        | quen                       | ce                         |                                       |                                       |                                |                            |                                |                                |                         |                                      |                                |
| <21<br><21<br><21<br><22   | .1:<br>.2:<br>.3:   | > 74<br>> PF<br>> Ar                              | RT<br>Ctifi                      |                         |                              |                            |                            | cial                                  | Sea                                   | uence                          | e: Re                      | ecoml                          | oina                           | nt                      |                                      |                                |
| <21<br><21<br><21<br><22<br><22<br><40   | .1:<br>.2:<br>.3:   | > 74<br>> PF<br>> Ar<br>> De<br>Vo                | escri<br>gecr                    | iptio                   | on of                        | E Art                      | cific                      | cial                                  |                                       |                                |                            |                                |                                |                         | Leu                                  | Asp                            |
| <21<br><21<br><22<br><22<br><40<br>Met   | .1:<br>.2:<br>.3:<br>.0:<br>.3:   | > 74<br>> PF<br>> Ar<br>> De<br>Vo<br>> 5<br>Ala  | escri<br>geck<br>Pro             | iptio<br>Pro            | on of<br>Thr<br>5            | E Art                      | cific<br>Val               | Ser                                   | Leu                                   | Gly<br>10                      | Asp                        | Glu                            | Leu                            | His                     | 15                                   | _                              |
| <21<br><21<br><22<br><22<br><40<br>Met   | .1:<br>.2:<br>.3:<br>.0:<br>.3:   | > 74<br>> PF<br>> Ar<br>> De<br>Vo<br>> 5<br>Ala  | escri<br>geck<br>Pro             | iptio<br>Pro            | on of<br>Thr<br>5            | E Art                      | cific<br>Val               |                                       | Leu                                   | Gly<br>10                      | Asp                        | Glu                            | Leu                            | His                     | 15                                   | _                              |
| <21<br><21<br><22<br><22<br><40<br>Met<br>1  | .1:<br>.2:<br>.3:<br>.0:<br>.3:<br>   | > 74<br>> PF<br>> Ar<br>> Ve<br>> 5<br>Ala        | escri<br>peck<br>Pro<br>Asp      | Pro<br>Val<br>20        | Thr<br>5                     | E Art<br>Asp<br>Met        | val<br>Ala                 | Ser                                   | Leu<br>Ala<br>25                      | Gly<br>10<br>Asp               | Asp<br>Ala                 | Glu<br>Leu                     | Leu<br>Asp                     | His<br>Asp<br>30        | 15<br>Phe                            | Asp                            |
| <21 <21 <22 <22 <40 Met  1 Gly   | 1:<br>2:<br>3:<br>0:<br>3:<br>10:<br>10:<br>10:<br>10:<br>10:<br>10:<br>10:<br>10:<br>10:<br>10 | > 74 > PF > An > De Ve > 5 Ala Asp                | escripeck Pro . Asp Met          | Pro<br>Val<br>20<br>Leu | Thr<br>5<br>Ala              | Asp<br>Met                 | Val<br>Ala<br>Gly          | Ser<br>His                            | Leu<br>Ala<br>25<br>Ser               | Gly<br>10<br>Asp               | Asp<br>Ala<br>Gly          | Glu<br>Leu<br>Pro              | Leu<br>Asp<br>Gly<br>45        | His<br>Asp<br>30<br>Phe | 15<br>Phe<br>Thr                     | Asp<br>Pro                     |
| <21<br><21<br><22<br><22<br><40<br>Met<br>1<br>Gly<br>Leu                            | 1:<br>2:<br>3:<br>0:<br>3:<br>10:<br>10:<br>11:<br>11:<br>11:<br>11:<br>11:<br>11:<br>11:<br>11 | > 74 > PF > An > De Ve > 5 Ala  Asp Asp 50        | escripeck Pro Asp Met 35         | Pro Val 20 Leu Ala      | Thr<br>5<br>Ala<br>Gly       | Asp<br>Met<br>Asp          | Val Ala Gly Gly 55         | Ser<br>His<br>Asp                     | Leu<br>Ala<br>25<br>Ser               | Gly<br>10<br>Asp<br>Pro        | Asp<br>Ala<br>Gly<br>Met   | Glu<br>Leu<br>Pro<br>Ala       | Leu<br>Asp<br>Gly<br>45<br>Asp | His Asp 30 Phe          | 15<br>Phe<br>Thr<br>Glu              | Asp<br>Pro                     |
| <211 <211 <221 <222 <400 Met 1 Gly Leu His Glu 65                                    | 1:<br>2:<br>3:<br>0:<br>3:<br>10:<br>10:<br>11:<br>11:<br>11:<br>11:<br>11:<br>11:<br>11:<br>11 | > 74 > PF > An > De Ve > 5 Ala Glu Asp 50 Gln     | escripeck Pro Asp Met 35 Ser     | Pro Val 20 Leu Ala Phe  | Thr 5 Ala Gly Pro            | Asp Met Asp Tyr Asp        | Val Ala Gly Gly 55 Ala     | Ser<br>His<br>Asp<br>40               | Leu<br>Ala<br>25<br>Ser<br>Leu<br>Gly | Gly<br>10<br>Asp<br>Pro<br>Asp | Asp Ala Gly Met Asp 75     | Glu<br>Leu<br>Pro<br>Ala<br>60 | Leu<br>Asp<br>Gly<br>45<br>Asp | His Asp 30 Phe Phe      | 15<br>Phe<br>Thr<br>Glu<br>Gly       | Asp<br>Pro<br>Phe<br>Lys<br>80 |
| <21<br><21<br><22<br><22<br><40<br>Met<br>1<br>Gly<br>Leu<br>His<br>Glu<br>65<br>Leu | 1: 2: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3:  | > 74 > PF > An > De Ve > 5 Ala Glu Asp 50 Gln Leu | escripeck Pro Asp Met 35 Ser Met | Pro Val 20 Leu Ala Phe  | Thr 5 Ala Gly Pro Thr Ser 85 | Asp Met Asp Tyr Asp 70 Arg | Val Ala Gly Gly 55 Ala Arg | Ser<br>His<br>Asp<br>40<br>Ala<br>Leu | Leu Ala 25 Ser Leu Gly Ser            | Gly 10 Asp Pro Asp Ile Asn 90  | Asp Ala Gly Met Asp 75 Ser | Glu Leu Pro Ala 60 Glu Ile     | Leu Asp Gly 45 Asp Tyr         | His Asp 30 Phe Phe Sly  | 15<br>Phe<br>Thr<br>Glu<br>Gly<br>95 | Asp<br>Pro<br>Phe<br>Lys<br>80 |

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Glu Glu Leu Cys Leu Val Cys Gly Asp Arg Ala Ser Gly Tyr His Tyr Asn Ala Leu Thr Cys Gly Ser Cys Lys Val Phe Phe Arg Arg Ser Val 155 Thr Lys Ser Ala Val Tyr Cys Cys Lys Phe Gly Arg Ala Cys Glu Met Asp Met Tyr Met Arg Arg Lys Cys Gln Glu Cys Arg Leu Lys Lys Cys Leu Ala Val Gly Met Arg Pro Glu Cys Val Val Pro Glu Asn Gln Cys Ala Met Lys Arg Arg Glu Lys Lys Ala Gln Lys Glu Lys Asp Lys Met Thr Thr Ser Pro Ser Ser Gln His Gly Gly Asn Gly Ser Leu Ala Ser Gly Gly Gln Asp Phe Val Lys Lys Glu Ile Leu Asp Leu Met Thr Cys Glu Pro Pro Gln His Ala Thr Ile Pro Leu Leu Pro Asp Glu Ile 260 265 Leu Ala Lys Cys Gln Ala Arg Asn Ile Pro Ser Leu Thr Tyr Asn Gln 280 Leu Ala Val Ile Tyr Lys Leu Ile Trp Tyr Gln Asp Gly Tyr Glu Gln 295 Pro Ser Glu Glu Asp Leu Arg Arg Ile Met Ser Gln Pro Asp Glu Asn Glu Ser Gln Thr Asp Val Ser Phe Arg His Ile Thr Glu Ile Thr Ile Leu Thr Val Gln Leu Ile Val Glu Phe Ala Lys Gly Leu Pro Ala Phe Thr Lys Ile Pro Gln Glu Asp Gln Ile Thr Leu Leu Lys Ala Cys Ser Ser Glu Val Met Met Leu Arg Met Ala Arg Arg Tyr Asp His Ser Ser Asp Ser Ile Phe Phe Ala Asn Asn Arg Ser Tyr Thr Arg Asp Ser Tyr 390 395 Lys Met Ala Gly Met Ala Asp Asn Ile Glu Asp Leu Leu His Phe Cys-Arg Gln Met Phe Ser Met Lys Val Asp Asn Val Glu Tyr Ala Leu Leu 425

Thr Ala Ile Val Ile Phe Ser Asp Arg Pro Gly Leu Glu Lys Ala Gln 435 440 445

Leu Val Glu Ala Ile Gln Ser Tyr Tyr Ile Asp Thr Leu Arg Ile Tyr 450 455 460

Ile Leu Asn Arg His Cys Gly Asp Ser Met Ser Leu Val Phe Tyr Ala 465 470 475 480

Lys Leu Ser Ile Leu Thr Glu Leu Arg Thr Leu Gly Asn Gln Asn
485
490
495

Ala Glu Met Cys Phe Ser Leu Lys Leu Lys Asn Arg Lys Leu Pro Lys 500 505 510

Phe Leu Glu Glu Ile Trp Asp Val His Ala Ile Pro Pro Ser Val Gln 515 520 525

Ser His Leu Gln Ile Thr Gln Glu Glu Asn Glu Arg Leu Glu Arg Ala 530 535 540

Glu Arg Met Arg Ala Ser Val Gly Gly Ala Ile Thr Ala Gly Ile Asp 545 550 555 560

Cys Asp Ser Ala Ser Thr Ser Ala Ala Ala Ala Ala Ala Gln His Gln 565 570 575

Pro Gln Pro Gln Pro Gln Pro Ser Ser Leu Thr Gln Asn Asp 580 585 590

Ser Gln His Gln Thr Gln Pro Gln Leu Gln Pro Gln Leu Pro Pro Gln 595 600 605

Leu Gln Gly Gln Leu Gln Pro Gln Leu Gln Pro Gln Leu Gln Thr Gln 610 620

Leu Gln Pro Gln Ile Gln Pro Gln Pro Gln Leu Leu Pro Val Ser Ala 625 630 635 640

Pro Val Pro Ala Ser Val Thr Ala Pro Gly Ser Leu Ser Ala Val Ser 645 650 655

Thr Ser Ser Glu Tyr Met Gly Gly Ser Ala Ala Ile Gly Pro Ile Thr 660 665 670

Pro Ala Thr Thr Ser Ser Ile Thr Ala Ala Val Thr Ala Ser Ser Thr 675 680 685

Thr Ser Ala Val Pro Met Gly Asn Gly Val Gly Val Gly Val 690 695 700

Gly Gly Asn Val Ser Met Tyr Ala Asn Ala Gln Thr Ala Met Ala Leu 705 710 715 720

Met Gly Val Ala Leu His Ser His Gln Glu Gln Leu Ile Gly Gly Val 725 730 735

Ala Val Lys Ser Glu His Ser Thr Thr Ala 740 745

| <21<br><21        | 0 > 6<br>1 > 2<br>2 > Dl<br>3 > A | AV            | icia:      | l Sed      | quenc             | ce         |            |            |            |                   |            |            |            |            |                   |     |
|-------------------|-----------------------------------|---------------|------------|------------|-------------------|------------|------------|------------|------------|-------------------|------------|------------|------------|------------|-------------------|-----|
| <22<br><22        | 3 > .De                           | escr:<br>pEcR | ipti       | on o       | E Art             | zifi(      | cial       | Seq        | uence      | e: Re             | ecoml      | oina       | nt         |            |                   |     |
|                   | 0><br>1> CI<br>2> (:              |               | (223)      | 3)         |                   |            |            |            |            |                   |            |            |            |            |                   |     |
|                   | 0> 6<br>gcc                       | ccc           | cca        | 200        | aat               | ata        | 300        | cta        | aaa        | ana               | g2g        | ata        | 929        | ++-        | <b>~</b> 2.6      | 48  |
|                   | Ala                               |               |            |            |                   |            |            |            |            |                   |            |            |            |            |                   | 40  |
|                   | gag<br>Glu                        |               |            |            |                   |            |            |            |            |                   |            |            |            |            |                   | 96  |
|                   | gac<br>Asp                        |               |            |            |                   |            |            |            |            |                   |            |            |            |            |                   | 144 |
|                   | gac<br>Asp<br>50                  |               |            |            |                   |            |            |            |            |                   |            | _          |            |            |                   | 192 |
|                   | cag<br>Gln                        |               |            |            |                   |            |            |            |            |                   |            |            |            |            |                   | 240 |
|                   | cta<br>Leu                        |               |            |            |                   |            |            |            |            |                   |            |            |            |            |                   | 288 |
|                   | gat<br>Asp                        |               |            |            |                   |            |            |            |            |                   |            | _          |            |            | -                 | 336 |
|                   | tgc<br>Cys                        |               |            |            |                   |            |            |            |            |                   |            |            |            |            |                   | 384 |
|                   | gag<br>Glu<br>130                 |               |            |            |                   |            |            |            |            |                   |            |            |            |            |                   | 432 |
| aac<br>Asn<br>145 | gcc<br>Ala                        | ctc<br>Leu    | acc<br>Thr | tgt<br>Cys | gag<br>Glu<br>150 | ggc<br>Gly | tgc<br>Cys | aag<br>Lys | Gly<br>999 | ttc<br>Phe<br>155 | ttt<br>Phe | cga<br>Arg | cgc<br>Arg | agc<br>Ser | gtt<br>Val<br>160 | 480 |

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| acg aag ag<br>Thr Lys Se        |           |           |       |   |   |   | 528  |
|---------------------------------|-----------|-----------|-------|---|---|---|------|
| gac atg ta<br>Asp Met Ty        |           |           |       |   |   |   | 576  |
| ctg gcc gt<br>Leu Ala Va<br>19  | l Gly Met | Arg Pro C | <br>  |   |   | _ | 624  |
| gcg atg aa<br>Ala Met Ly<br>210 |           | -         | <br>  |   | _ | - | 672  |
| acc act to<br>Thr Thr Se<br>225 |           |           |       |   |   |   | 720  |
| ggt ggc gg<br>Gly Gly Gl        | _         | _         | <br>  | _ | _ |   | 768  |
| tgc gag cc<br>Cys Glu Pr        | -         | _         |       |   |   |   | 816  |
| ttg gcc aa<br>Leu Ala Ly<br>27  | s Cys Gln | Ala Arg A |       |   |   |   | 864  |
| ttg gcc gt<br>Leu Ala Va<br>290 |           | -         | <br>_ |   |   | _ | 912  |
| cca tct ga<br>Pro Ser Gl<br>305 |           |           |       |   |   |   | 960  |
| gag agc ca<br>Glu Ser Gl        |           | -         |       |   |   |   | 1008 |
| ctc acg gt<br>Leu Thr Va        |           |           | <br>_ |   |   |   | 1056 |
| aca aag at<br>Thr Lys Il<br>35  | e Pro Gln | Glu Asp C |       |   |   |   | 1104 |
| tcg gag gt<br>Ser Glu Va<br>370 |           |           |       |   |   |   | 1152 |

| _                 |            |            |            |            | gcg<br>Ala<br>390 |            |            | _          |            |                   | _          |            |            |            |                   | 1200 |
|-------------------|------------|------------|------------|------------|-------------------|------------|------------|------------|------------|-------------------|------------|------------|------------|------------|-------------------|------|
|                   |            |            |            |            | gct<br>Ala        |            |            |            |            |                   |            |            |            |            |                   | 1248 |
|                   |            |            |            |            | atg<br>Met        |            |            |            |            |                   |            |            |            |            |                   | 1296 |
|                   |            |            |            |            | ttc<br>Phe        |            |            |            |            |                   |            |            |            |            |                   | 1344 |
|                   |            |            |            |            | cag<br>Gln        |            |            |            |            | _                 | _          |            | _          |            |                   | 1392 |
|                   |            |            | _          |            | tgc<br>Cys<br>470 |            | _          |            | _          | _                 |            | _          |            |            | _                 | 1440 |
| _                 | _          |            | _          |            | ctc<br>Leu        |            |            | _          | _          | _                 | _          |            |            | _          |                   | 1488 |
|                   |            |            |            |            | tca<br>Ser        |            |            |            |            |                   |            |            |            |            |                   | 1536 |
|                   |            |            |            |            | tgg<br>Trp        | -          | _          |            | _          |                   | _          |            | _          | _          | _                 | 1584 |
|                   |            |            |            |            | acc<br>Thr        |            |            |            |            |                   |            |            |            |            |                   | 1632 |
| gag<br>Glu<br>545 | cgt<br>Arg | atg<br>Met | cgg<br>Arg | gca<br>Ala | tcg<br>Ser<br>550 | gtt<br>Val | Gly<br>aaa | ggc<br>Gly | gcc<br>Ala | att<br>Ile<br>555 | acc<br>Thr | gcc<br>Ala | ggc<br>Gly | att<br>Ile | gat<br>Asp<br>560 | 1680 |
|                   |            |            |            |            | act<br>Thr        |            |            |            |            |                   |            |            |            |            |                   | 1728 |
|                   |            |            |            |            | cag<br>Gln        |            |            |            |            |                   |            |            |            |            |                   | 1776 |
|                   |            |            | _          |            | cag<br>Gln        | _          | _          |            |            |                   | _          |            |            |            | _                 | 1824 |

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| ctg caa ggt caa 6<br>Leu Gln Gly Gln 1<br>610         |                                       |   |                       |                                |
|---|---------------------------------------|---|-----------------------|--------------------------------|
| ctc cag cca cag a<br>Leu Gln Pro Gln :<br>625         |                                       |   | Leu Pro Val           |                                |
| ccc gtg ccc gcc g<br>Pro Val Pro Ala g                |                                       |   | Leu Ser Ala           |                                |
| acg agc agc gaa t<br>Thr Ser Ser Glu 1<br>660         |                                       |   |                       |                                |
| ccg gca acc acc a<br>Pro Ala Thr Thr 8<br>675         | Ser Ser Ile T                         |   |                       |                                |
| aca tca gcg gta o<br>Thr Ser Ala Val 1<br>690         |                                       |   |                       |                                |
| ggc ggc aac gtc a<br>Gly Gly Asn Val S<br>705         | agc atg tat g<br>Ser Met Tyr A<br>710 | cg aac gcc cag<br>la Asn Ala Glr<br>715 | n Thr Ala Met A       | gcc ttg 2160<br>Ala Leu<br>720 |
| atg ggt gta gcc o<br>Met Gly Val Ala I                |                                       |   | Leu Ile Gly           |                                |
| gcg gtt aag tcg g<br>Ala Val Lys Ser (<br>740         |                                       |   | 3                     | 2241                           |
| <210> 7<br><211> 746<br><212> PRT<br><213> Artificial | Sequence                              |   |                       |                                |
| <220><br><223> Description<br>VpEcR                   | n of Artifici                         | al Sequence: F                          | Recombinant           |                                |
| <400> 7<br>Met Ala Pro Pro 1                          | Thr Asp Val S                         | er Leu Gly Asp<br>10                    | o Glu Leu His I       | Leu Asp<br>15                  |
| Gly Glu Asp Val A                                     | Ala Met Ala H                         | is Ala Asp Ala<br>25                    | a Leu Asp Asp I<br>30 | Phe Asp                        |
| Leu Asp Met Leu (                                     |                                       | sp Ser Pro Gly<br>40                    | Pro Gly Phe 3         | Thr Pro                        |

His Asp Ser Ala Pro Tyr Gly Ala Leu Asp Met Ala Asp Phe Glu Phe 50 55 60

Leu Leu Gly Thr Ser Arg Arg Ile Ser Asn Ser Ile Ser Ser Gly Arg 90 Asp Asp Leu Ser Pro Ser Ser Ser Leu Asn Gly Tyr Ser Ala Asn Glu Ser Cys Asp Ala Lys Lys Ser Lys Lys Gly Pro Ala Pro Arg Val Gln Glu Glu Leu Cys Leu Val Cys Gly Asp Arg Ala Ser Gly Tyr His Tyr Asn Ala Leu Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ser Val Thr Lys Ser Ala Val Tyr Cys Cys Lys Phe Gly Arg Ala Cys Glu Met Asp Met Tyr Met Arg Arg Lys Cys Gln Glu Cys Arg Leu Lys Lys Cys 185 Leu Ala Val Gly Met Arg Pro Glu Cys Val Val Pro Glu Asn Gln Cys 195 205 Ala Met Lys Arg Arg Glu Lys Lys Ala Gln Lys Glu Lys Asp Lys Met 215 Thr Thr Ser Pro Ser Ser Gln His Gly Gly Asn Gly Ser Leu Ala Ser 225 230 235 Gly Gly Gln Asp Phe Val Lys Lys Glu Ile Leu Asp Leu Met Thr Cys Glu Pro Pro Gln His Ala Thr Ile Pro Leu Leu Pro Asp Glu Ile

Glu Gln Met Phe Thr Asp Ala Leu Gly Ile Asp Glu Tyr Gly Gly Lys

Leu Ala Lys Cys Gln Ala Arg Asn Ile Pro Ser Leu Thr Tyr Asn Gln 275 280 285

Leu Ala Val Ile Tyr Lys Leu Ile Trp Tyr Gln Asp Gly Tyr Glu Gln 290 295 300

Pro Ser Glu Glu Asp Leu Arg Arg Ile Met Ser Gln Pro Asp Glu Asn 305 310 315 320

Glu Ser Gln Thr Asp Val Ser Phe Arg His Ile Thr Glu Ile Thr Ile
325 330 335

Leu Thr Val Gln Leu Ile Val Glu Phe Ala Lys Gly Leu Pro Ala Phe 340 345 350

Thr Lys Ile Pro Gln Glu Asp Gln Ile Thr Leu Leu Lys Ala Cys Ser 355 360 365

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Ser Glu Val Met Met Leu Arg Met Ala Arg Arg Tyr Asp His Ser Ser 370 Ser Ile Phe Phe Ala Asn Asn Arg Ser Tyr Thr Arg Asp Ser Tyr 385 Met Ala Gly Met Ala Asp Asn Ile Glu Asp Leu Leu His Phe Cys

Lys Met Ala Gly Met Ala Asp Asn Ile Glu Asp Leu Leu His Phe Cys 405 410 415

Arg Gln Met Phe Ser Met Lys Val Asp Asn Val Glu Tyr Ala Leu Leu 420 425 430

Thr Ala Ile Val Ile Phe Ser Asp Arg Pro Gly Leu Glu Lys Ala Gln
435 440 445

Leu Val Glu Ala Ile Gln Ser Tyr Tyr Ile Asp Thr Leu Arg Ile Tyr 450 455 460

Ile Leu Asn Arg His Cys Gly Asp Ser Met Ser Leu Val Phe Tyr Ala 465 470 475 480

Lys Leu Ser Ile Leu Thr Glu Leu Arg Thr Leu Gly Asn Gln Asn 485 490 495

Ala Glu Met Cys Phe Ser Leu Lys Leu Lys Asn Arg Lys Leu Pro Lys 500 505 510

Phe Leu Glu Glu Ile Trp Asp Val His Ala Ile Pro Pro Ser Val Gln 515 520 525

Ser His Leu Gln Ile Thr Gln Glu Glu Asn Glu Arg Leu Glu Arg Ala 530 540

Glu Arg Met Arg Ala Ser Val Gly Gly Ala Ile Thr Ala Gly Ile Asp 545 550 555 560

Cys Asp Ser Ala Ser Thr Ser Ala Ala Ala Ala Ala Ala Gln His Gln 565 570 575

Pro Gln Pro Gln Pro Gln Pro Ser Ser Leu Thr Gln Asn Asp 580 585 590

Ser Gln His Gln Thr Gln Pro Gln Leu Gln Pro Gln Leu Pro Pro Gln 595 600 605

Leu Gln Gly Gln Leu Gln Pro Gln Leu Gln Pro Gln Leu Gln Thr Gln 610 620

Leu Gln Pro Gln Ile Gln Pro Gln Pro Gln Leu Leu Pro Val Ser Ala 625 630 635 640

Pro Val Pro Ala Ser Val Thr Ala Pro Gly Ser Leu Ser Ala Val Ser 645 650 655

Thr Ser Ser Glu Tyr Met Gly Gly Ser Ala Ala Ile Gly Pro Ile Thr 660 665 670

Pro Ala Thr Thr Ser Ser Ile Thr Ala Ala Val Thr Ala Ser Ser Thr 680 Thr Ser Ala Val Pro Met Gly Asn Gly Val Gly Val Gly Val Gly Val 695 Gly Gly Asn Val Ser Met Tyr Ala Asn Ala Gln Thr Ala Met Ala Leu 710 715 Met Gly Val Ala Leu His Ser His Gln Glu Gln Leu Ile Gly Gly Val 725 730 Ala Val Lys Ser Glu His Ser Thr Thr Ala 740 <210> 8 <211> 3126 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Recombinant <220> <221> CDS <222> (1)..(3123) <400> 8 atg gac tcc aaa gaa tca tta act cct ggt aga gaa gaa aac ccc agc 48 Met Asp Ser Lys Glu Ser Leu Thr Pro Gly Arg Glu Glu Asn Pro Ser 10 15 agt gtg ctt gct cag gag agg gga gat gtg atg gac ttc tat aaa acc Ser Val Leu Ala Gln Glu Arg Gly Asp Val Met Asp Phe Tyr Lys Thr 20 cta aga gga ggt act gtg aag gtt tet geg tet tea eec tea etg 144 Leu Arg Gly Gly Ala Thr Val Lys Val Ser Ala Ser Ser Pro Ser Leu 35 gct gtc gct tct caa tca gac tcc aag cag cga aga ctt ttg gtt gat 192 Ala Val Ala Ser Gln Ser Asp Ser Lys Gln Arg Arg Leu Leu Val Asp 50 ttt cca aaa ggc tca gta agc aat gcg cag cag cca gat ctg tcc aaa 240 Phe Pro Lys Gly Ser Val Ser Asn Ala Gln Gln Pro Asp Leu Ser Lys gca gtt tca ctc tca atg gga ctg tat atg gga gag aca gaa aca aaa 288 Ala Val Ser Leu Ser Met Gly Leu Tyr Met Gly Glu Thr Glu Thr Lys gtg atg gga aat gac ctg gga ttc cca cag cag ggc caa atc agc ctt 336 Val Met Gly Asn Asp Leu Gly Phe Pro Gln Gln Gly Gln Ile Ser Leu 105

|   |   |   |   |   | gac<br>Asp        |   |   |   |   |   |   |   |   |   |   | 384  |
|---|---|---|---|---|-------------------|---|---|---|---|---|---|---|---|---|---|------|
|   |   |   | _ |   | agt<br>Ser        | _ |   |   |   |   | _ | _ |   | - |   | 432  |
|   |   | - |   |   | gcc<br>Ala<br>150 |   |   |   | - |   |   |   |   |   |   | 480  |
|   | _ | _ |   |   | gaa<br>Glu        | _ |   |   | _ | _ |   | _ |   |   |   | 528  |
|   |   |   |   |   | aaa<br>Lys        | _ |   |   |   | - |   | _ |   |   | _ | 576  |
|   | _ | _ | _ | _ | gag<br>Glu        |   |   |   |   |   |   |   |   |   | _ | 624  |
|   |   | _ |   |   | aga<br>Arg        |   | _ | _ | _ |   | _ | _ |   | _ | _ | 672  |
|   |   |   |   |   | gga<br>Gly<br>230 |   |   |   |   |   |   |   |   |   |   | 720  |
|   |   |   |   |   | aag<br>Lys        |   |   |   |   |   |   |   |   |   |   | 768  |
|   | _ | _ |   |   | gat<br>Asp        | _ | _ | _ |   | _ |   | _ |   | _ |   | 816  |
| _ |   |   |   |   | aca<br>Thr        | _ |   | _ | _ |   |   | _ |   | _ |   | 864  |
|   |   | _ |   | _ | caa<br>Gln        |   |   | _ |   |   | _ |   | _ | _ | _ | 912  |
| _ |   |   |   | _ | aat<br>Asn<br>310 |   |   |   |   |   | _ |   | _ |   |   | 960  |
| _ |   |   |   | _ | acc<br>Thr        |   |   |   | _ | _ |   |   |   | _ | _ | 1008 |

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|   |   |   |   |   |   |   |   |   |   |   |   |   | att<br>Ile<br>350 |   |   | 1056 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|-------------------|---|---|------|
|   |   |   |   |   |   |   |   |   |   |   |   |   | agg<br>Arg        |   |   | 1104 |
|   |   |   |   |   |   |   |   |   |   |   |   |   | aac<br>Asn        |   |   | 1152 |
|   |   |   |   |   |   |   |   |   |   |   |   |   | atg<br>Met        |   |   | 1200 |
| _ | _ | _ |   |   |   |   | _ |   |   |   | _ |   | aca<br>Thr        |   |   | 1248 |
|   |   | _ |   | _ |   |   |   |   | _ | _ | _ | _ | tgc<br>Cys<br>430 |   | _ | 1296 |
|   | _ |   |   |   |   |   |   | _ |   | • | _ |   | tcc<br>Ser        | _ | _ | 1344 |
|   |   |   | _ | _ | _ | _ | _ | _ | _ | _ | _ |   | tgc<br>Cys        | _ | _ | 1392 |
|   |   |   |   |   |   |   |   |   |   |   |   |   | aag<br>Lys        |   |   | 1440 |
|   |   |   |   |   |   |   |   |   |   |   |   |   | ccg<br>Pro        |   |   | 1488 |
|   |   |   |   |   |   |   |   |   |   |   |   |   | aag<br>Lys<br>510 |   |   | 1536 |
| _ | _ |   | _ | _ |   | _ |   |   | _ | _ | _ |   | cag<br>Gln        |   |   | 1584 |
|   |   |   | _ | _ | _ |   |   |   |   |   | _ |   | gtt<br>Val        | _ | _ | 1632 |
|   |   |   | _ |   | _ |   | _ |   | _ |   | _ |   | gcc<br>Ala        |   |   | 1680 |

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|   |   |   |   |   |   |                   |   |   | 19 |   |   |   |   |   |                           |      |
|---|---|---|---|---|---|-------------------|---|---|----|---|---|---|---|---|---------------------------|------|
| _ |   |   |   | _ | _ | ata<br>Ile        | _ | _ | _  |   |   |   | _ |   |                           | 1728 |
|   |   |   | _ |   |   | cag<br>Gln        | _ | _ | _  |   |   | _ |   |   |                           | 1776 |
|   | _ | _ |   |   |   | cag<br>Gln        |   |   | _  |   | _ |   |   | _ |                           | 1824 |
|   |   |   |   |   |   | aac<br>Asn<br>615 |   |   |    |   |   |   |   |   |                           | 1872 |
|   |   |   |   |   |   | ata<br>Ile        |   | _ | _  | _ | _ |   | _ |   |                           | 1920 |
|   |   |   |   |   |   | ttt<br>Phe        |   | _ |    |   | _ |   | _ | _ |                           | 1968 |
|   |   |   |   |   |   | tcg<br>Ser        |   |   |    |   |   |   |   |   |                           | 2016 |
|   |   |   |   |   |   | tcg<br>Ser        |   |   |    |   |   |   |   |   |                           | 2064 |
|   |   |   |   | _ |   | tac<br>Tyr<br>695 |   | _ | _  |   | _ | _ | _ |   |                           | 2112 |
|   |   |   |   |   |   | tgc<br>Cys        |   |   |    |   |   |   |   |   |                           | 2160 |
|   |   |   |   |   |   | ctc<br>Leu        |   | _ |    |   |   |   | _ | _ |                           | 2208 |
|   |   |   |   |   |   | caa<br>Gln        |   |   |    |   |   |   |   |   |                           | 2256 |
|   |   |   |   |   |   | tat<br>Tyr        |   |   |    |   |   |   |   |   |                           | 2304 |
| _ | _ |   | _ |   |   | _                 | _ | _ |    | _ |   |   |   |   | ctg <sup>{</sup><br>Leu . | 2352 |

|   |   |   |   |   |   |     |   |   |   | tgt<br>Cys<br>795 |     |   |   |   |              | 2400 |
|---|---|---|---|---|---|-----|---|---|---|-------------------|-----|---|---|---|--------------|------|
|   |   |   |   |   |   |     |   |   |   | gag<br>Glu        |     |   |   |   |              | 2448 |
|   |   |   |   |   |   |     |   |   |   | cag<br>Gln        |     |   |   |   | gag -<br>Glu | 2496 |
|   |   |   |   |   |   |     |   | _ | _ | cgg<br>Arg        | _   | _ | _ |   |              | 2544 |
|   |   |   |   |   |   |     |   |   |   | gcc<br>Ala        |     |   | _ |   |              | 2592 |
| _ | _ |   | _ | _ |   | _   |   | _ |   | cag<br>Gln<br>875 |     | _ |   |   |              | 2640 |
|   |   | _ |   | _ |   | _   |   | _ |   | cag<br>Gln        |     |   | _ | _ |              | 2688 |
|   |   | _ |   |   |   | _   | _ |   |   | caa<br>Gln        | _   |   |   | _ |              | 2736 |
|   |   |   |   |   |   |     |   | _ |   | cag<br>Gln        |     |   |   | _ |              | 2784 |
|   |   |   |   |   |   |     |   |   |   | gcc<br>Ala        |     |   |   |   |              | 2832 |
|   |   | - |   |   | _ | _   | _ | - | - | gaa<br>Glu<br>955 |     | _ |   |   | _            | 2880 |
|   |   |   |   |   |   |     |   |   |   | acc<br>Thr        |     |   |   |   |              | 2928 |
|   |   |   |   |   |   |     |   |   |   | gta<br>Val        |     |   |   |   |              | 2976 |
|   |   |   |   |   |   | Val |   |   |   | gtc<br>Val        | Ser |   |   |   |              | 3024 |

|  | Ala Met Ala                        |                            | gta gcc ctg cat<br>Val Ala Leu His<br>1020 |   |  |  |
|--|------------------------------------|----------------------------|--|---|--|--|
| gag cag ctt<br>Glu Gln Leu<br>1025                               | atc ggg gga<br>Ile Gly Gly<br>1030 | gtg gcg gtt<br>Val Ala Val | aag tcg gag cac<br>Lys Ser Glu His<br>1035 | tcg acg act 3120<br>Ser Thr Thr<br>1040 |  |  |
| gca tag<br>Ala   |                                    | ,                          |  | 3126                                    |  |  |
| <210> 9 <211> 1041 <212> PRT <213> Artificial Sequence           |                                    |                            |  |   |  |  |
| <220> <223> Description of Artificial Sequence: Recombinant GECR |                                    |                            |  |   |  |  |
| <400> 9<br>Met Asp Ser<br>1                                      | Lys Glu Ser<br>5                   | Leu Thr Pro                | Gly Arg Glu Glu<br>10                      | Asn Pro Ser<br>15                       |  |  |
| Ser Val Leu  | Ala Gln Glu<br>20                  | Arg Gly Asp<br>25          | Val Met Asp Phe                            | Tyr Lys Thr                             |  |  |
| Leu Arg Gly<br>35  | Gly Ala Thr                        | Val Lys Val<br>40          | Ser Ala Ser Ser<br>45                      | Pro Ser Leu                             |  |  |
| Ala Val Ala<br>50  | Ser Gln Ser                        | Asp Ser Lys<br>55          | Gln Arg Arg Leu<br>60                      | Leu Val Asp                             |  |  |
| Phe Pro Lys<br>65  | Gly Ser Val                        | Ser Asn Ala                | Gln Gln Pro Asp<br>75                      | Leu Ser Lys<br>80                       |  |  |
| Ala Val Ser  | Leu Ser Met<br>85                  | Gly Leu Tyr                | Met Gly Glu Thr<br>90                      | Glu Thr Lys<br>95                       |  |  |
|  | Asn Asp Leu<br>100                 | Gly Phe Pro<br>105         | Gln Gln Gly Gln                            | Ile Ser Leu<br>110                      |  |  |
| Ser Ser Gly<br>115   | Glu Thr Asp                        | Leu Lys Leu<br>120         | Leu Glu Glu Ser<br>125                     | Ile Ala Asn                             |  |  |
| Leu Asn Arg<br>130   | Ser Thr Ser                        | Val Pro Glu<br>135         | Asn Pro Lys Ser<br>140                     | Ser Ala Ser                             |  |  |
| Thr Ala Val<br>145   | Ser Ala Ala<br>150                 | Pro Thr Glu                | Lys Glu Phe Pro<br>155                     | Lys Thr His<br>160                      |  |  |
| Ser Asp Val  | Ser Ser Glu<br>165                 | Gln Gln His                | Leu Lys Gly Gln<br>170                     | Thr Gly Thr<br>175                      |  |  |
| Asn Gly Gly  | Asn Val Lys<br>180                 | Leu Tyr Thr<br>185         | Thr Asp Gln Ser                            | Thr Phe Asp<br>190                      |  |  |

Ile Leu Gln Asp Leu Glu Phe Ser Ser Gly Ser Pro Gly Lys Glu Thr
195 200 205

Asn Glu Ser Pro Trp Arg Ser Asp Leu Leu Ile Asp Glu Asn Cys Leu 210 215 220

Leu Ser Pro Leu Ala Gly Glu Asp Asp Ser Phe Leu Leu Glu Gly Asn 225 230 235 240

Ser Asn Glu Asp Cys Lys Pro Leu Ile Leu Pro Asp Thr Lys Pro Lys 245 250 255

Ile Lys Asp Asn Gly Asp Leu Val Leu Ser Ser Pro Ser Asn Val Thr 260 265 270

Leu Pro Gln Val Lys Thr Glu Lys Glu Asp Phe Ile Glu Leu Cys Thr 275 280 285

Pro Gly Val Ile Lys Gln Glu Lys Leu Gly Thr Val Tyr Cys Gln Ala 290 295 300

Ser Phe Pro Gly Ala Asn Ile Ile Gly Asn Lys Met Ser Ala Ile Ser 305 310 315 320

Val His Gly Val Ser Thr Ser Gly Gly Gln Met Tyr His Tyr Asp Met 325 330 335

Asn Thr Ala Ser Leu Ser Gln Gln Gln Asp Gln Lys Pro Ile Phe Asn 340 345 350

Val Ile Pro Pro Ile Pro Val Gly Ser Glu Asn Trp Asn Arg Cys Gln 355 360 365

Gly Ser Gly Asp Asp Asn Leu Thr Ser Leu Gly Thr Leu Asn Phe Pro 370 375 380

Gly Arg Thr Val Phe Ser Asn Gly Tyr Ser Ser Pro Ser Met Arg Pro 385 390 395 400

Asp Val Ser Ser Pro Pro Ser Ser Ser Ser Thr Ala Thr Thr Gly Pro
405 410 415

Pro Pro Ser Gly Arg Val Gln Glu Glu Leu Cys Leu Val Cys Gly Asp 420 425 430

Arg Ala Ser Gly Tyr His Tyr Asn Ala Leu Thr Cys Gly Ser Cys Lys 435 440 445

Val Phe Phe Arg Arg Ser Val Thr Lys Ser Ala Val Tyr Cys Cys Lys 450 455 460

Phe Gly Arg Ala Cys Glu Met Asp Met Tyr Met Arg Arg Lys Cys Gln 465 470 475 480

Glu Cys Arg Leu Lys Lys Cys Leu Ala Val Gly Met Arg Pro Glu Cys
485 490 495

Val Val Pro Glu Asn Gln Cys Ala Met Lys Arg Arg Glu Lys Lys Ala
500 505 510

Gln Lys Glu Lys Asp Lys Met Thr Thr Ser Pro Ser Ser Gln His Gly 515 520 525

Gly Asn Gly Ser Leu Ala Ser Gly Gly Gln Asp Phe Val Lys Lys 530 535 540

Glu Ile Leu Asp Leu Met Thr Cys Glu Pro Pro Gln His Ala Thr Ile 545 550 555 560

Pro Leu Leu Pro Asp Glu Ile Leu Ala Lys Cys Gln Ala Arg Asn Ile 565 570 575

Pro Ser Leu Thr Tyr Asn Gln Leu Ala Val Ile Tyr Lys Leu Ile Trp 580 585 590

Tyr Gln Asp Gly Tyr Glu Gln Pro Ser Glu Glu Asp Leu Arg Arg Ile 595 600 605

Met Ser Gln Pro Asp Glu Asn Glu Ser Gln Thr Asp Val Ser Phe Arg 610 615 620

His Ile Thr Glu Ile Thr Ile Leu Thr Val Gln Leu Ile Val Glu Phe 625 630 635 640

Ala Lys Gly Leu Pro Ala Phe Thr Lys Ile Pro Gln Glu Asp Gln Ile 645 650 655

Thr Leu Leu Lys Ala Cys Ser Ser Glu Val Met Met Leu Arg Met Ala 660 665 670

Arg Arg Tyr Asp His Ser Ser Asp Ser Ile Phe Phe Ala Asn Asn Arg 675 680 685

Ser Tyr Thr Arg Asp Ser Tyr Lys Met Ala Gly Met Ala Asp Asn Ile 690 695 700

Glu Asp Leu Leu His Phe Cys Arg Gln Met Phe Ser Met Lys Val Asp 705 710 715 720

Asn Val Glu Tyr Ala Leu Leu Thr Ala Ile Val Ile Phe Ser Asp Arg
725 730 735

Pro Gly Leu Glu Lys Ala Gln Leu Val Glu Ala Ile Gln Ser Tyr Tyr 740 745 750

Ile Asp Thr Leu Arg Ile Tyr Ile Leu Asn Arg His Cys Gly Asp Ser 755 760 765

Met Ser Leu Val Phe Tyr Ala Lys Leu Leu Ser Ile Leu Thr Glu Leu 770 775 780

Arg Thr Leu Gly Asn Gln Asn Ala Glu Met Cys Phe Ser Leu Lys Leu 785 790 795 800

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Lys Asn Arg Lys Leu Pro Lys Phe Leu Glu Glu Ile Trp Asp Val His 805 810 815

Ala Ile Pro Pro Ser Val Gln Ser His Leu Gln Ile Thr Gln Glu Glu 820 825 830

Asn Glu Arg Leu Glu Arg Ala Glu Arg Met Arg Ala Ser Val Gly Gly 835 840 845

Ala Ile Thr Ala Gly Ile Asp Cys Asp Ser Ala Ser Thr Ser Ala Ala 850 855 860

Ala Ala Ala Gln His Gln Pro Gln Pro Gln Pro Gln Pro 865 870 875 880

Ser Ser Leu Thr Gln Asn Asp Ser Gln His Gln Thr Gln Pro Gln Leu 885 890 895

Gln Pro Gln Leu Pro Pro Gln Leu Gln Gly Gln Leu Gln Pro Gln Leu 900 905 910

Gln Pro Gln Leu Gln Thr Gln Leu Gln Pro Gln Ile Gln Pro Gln Pro 915 920 925

Gln Leu Leu Pro Val Ser Ala Pro Val Pro Ala Ser Val Thr Ala Pro 930 935 940

Gly Ser Leu Ser Ala Val Ser Thr Ser Ser Glu Tyr Met Gly Gly Ser 945 950 955 960

Ala Ala Ile Gly Pro Ile Thr Pro Ala Thr Thr Ser Ser Ile Thr Ala 965 970 975

Ala Val Thr Ala Ser Ser Thr Thr Ser Ala Val Pro Met Gly Asn Gly 980 985 990

Val Gly Val Gly Val Gly Gly Asn Val Ser Met Tyr Ala Asn 995 1000 1005

Ala Gln Thr Ala Met Ala Leu Met Gly Val Ala Leu His Ser His Gln 1010 1015 1020

Glu Gln Leu Ile Gly Gly Val Ala Val Lys Ser Glu His Ser Thr Thr 1025 1030 1035 1040

Ala

<210> 10

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Modified ecdysone response element

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<221> modified_base
<222> (4)..(5)
<223> a, c, t, g, other or unknown
<220>
<221> modified_base
<222> (7)..(11)
<223> a, c, t, g, other or unknown, wherein the length of this
      region may vary in length from 0 to 5, with 1 being
      especially preferred
<220>
<221> modified base
<222> (14)..(15)
<223> a, c, t, g, other or unknown
<400> 10
rgbnnmnnnn ntgnncy
                                                                     17
<210> 11
<211> 17
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Modified
      ecdysone response element
<220>
<221> modified base
<222> (3)..(4)
<223> a, c, t, g, other or unknown
<220>
<221> modified base
<222> (7)..(11)
<223> a, c, t, g, other or unknown, wherein the length of this
      region may vary in length from 0 to 5, with 1 being
      especially preferred
<220>
<221> modified base
\langle 222 \rangle (13)..(14)
<223> a, c, t, g, other or unknown
<400> 11
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7 Q

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agtgcantgt tct
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<221> modified base
<222> (7)..(11)
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      especially preferred
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                                                                    17 .
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                                                                    49
<210> 15
<211> 53
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4 6 66

| <212> DI |  |    |
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|          | occupation of Amtificial Company, Completia                    |    |
|          | escription of Artificial Sequence: Synthetic<br>ligonucleotide |    |
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| 3        |  |    |
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| 0.       | 11gonucleocide   |    |
| <400> 16 | 6  |    |
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|          |  |    |
| 010 1    | -  |    |
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| <211> 34 |  |    |
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|          | ligonucleotide   |    |
|          |  |    |
| <400> 17 |  |    |
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|          |  |    |
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| <211> 35 |  |    |
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| \213> AI | retrictat pedaeuce   |    |
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|          | ligonucleotide   |    |
|          |  |    |
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| agctttca | agc aagagaacaa tgcacttgtc catcg                                | 35 |

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